

**REMARKS**

This Amendment is in response to the non-final Office action (Paper No. 20071106) mailed on 26 November 2007. Reexamination and reconsideration are respectfully requested.

**Listing of The Claims**

Pursuant to 37 CFR §121(c), the claim listing, including the text of the claims, will serve to replace all prior versions of the claims, in the application.

**Status of The Claims**

Claims 7, 11, 13, 17, 19 and 24 are pending in this application.

**Amendment of The Claims**

Claims 8-10, 14-16, and 20-23 are canceled without prejudice or disclaimer of their subject matter. Claims 7, 13, 19 and 24 are amended.

**Issues raised by Paper No. 20071106**

**Claim Rejections - 35 U.S.C. 112**

- I. **Claims 19-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.**

Regarding claims 19-24, on page 2, paragraph 3 of Paper No. 20071106, the Examiner stated:

“The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had

possession of the claimed invention. In claim 19, Applicant has added limitations directed to a screw thread that comprises crests and roots. Such limitations were not previously described in the originally filed disclosure. For the purpose of examination, as best understood by Examiner, the aforementioned “crests” will be interpreted as the free distal end of each thread, whereas the “roots” will be interpreted as the proximal base portions of each thread that are attached to the implant body. In claim 22, Applicant has added limitations directed to a ridge formed on the flanks of the screw thread. For the purpose of examination, Examiner will interpret the claimed “at least one ridge formed on the flanks of the screw thread,” to represent at least one micro-pattern.”

Applicant respectfully traverses.

Regarding claim 19, **the terms “crest”, “root” and “flank” are well-known terminologies used to define a thread, and Applicant’s original filed disclosure includes drawings clearly showing the crests, roots and flanks of a thread.** A search of recently issued U.S. patents returns more than three hundreds patents using “crest”, “root” and “flank” to define a thread. For example, in U.S. Patent 6,572,315, entitled “Threaded fastener having a thread crest greater than its thread root”, issued on 3 June 2003, lines 59-62 of column 2 reads:

“Each section of the **thread** includes a **root** base, an upper **flank** and a lower flank which are girded on an outer exterior by a **crest** having a height.”

In addition, Applicant’s original filed FIG. 1, for example, clearly shows flank 10a, crest 10b and the root (the left portion of the single thread shown in FIG. 1). As stated in Manual of Patent Examining Procedure (MPEP) §2163,

“It is now well accepted that a satisfactory description may be in the claims or **any other portion of the originally filed specification**. These early opinions did not address the quality or specificity of particularity that was required in the description, i.e., how much description is enough.

**An applicant shows possession** of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, **figures**, diagrams, and formulas that fully set forth the claimed invention.<sup>1</sup>

Accordingly, Applicant respectfully submits that Applicant had possession of the claimed invention because Applicant's original filed figures include all the added limitations in claim 19.

Regarding claim 22, according to Merriam-Webster Online Dictionary, "ridge" means "an elevated body part or structure and an elongate crest" (<http://www.m-w.com/dictionary/ridge>). In Applicant's original filed FIG. 1, for example, "ridge" is clearly identified by reference numeral "100a". In addition, on page 5, lines 13-14 of Applicant's original specification reads:

"..... and the protrusions mean the micro-patterns formed outwardly on the thread inclines."

Therefore, Applicant respectfully submits that Applicant had possession of the claimed invention because Applicant's original filed figures and specification include all the added limitations in claim 22.

**II. Claims 19-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Regarding claims 19-24, on page 3, paragraph 4 of Paper No. 20071106, the Examiner stated:

"In light of the rejection of 35 U.S.C. 112, first paragraph, as detailed above, for the purpose of examination, as best understood by Examiner, the aforementioned "crests" will be interpreted as the free distal end of each thread, whereas the "roots" will be interpreted as the proximal base portions

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<sup>1</sup> *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997).

of each thread that are attached to the implant body. In regard to claim 22, Examiner will interpret the claimed “at least one ridge formed on the flanks of the screw thread,” to represent at least one micro-pattern.”

Applicant respectfully traverses.

As stated in Manual of Patent Examining Procedure (MPEP) §2173.01,

“A fundamental principle contained in 35 U.S.C. 112, second paragraph is that **applicants are their own lexicographers**. They can define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification. See MPEP § 2111.01. Applicant may use functional language, alternative expressions, negative limitations, or any style of expression or format of claim which makes clear the boundaries of the subject matter for which protection is sought.”

Accordingly, Applicant’s respectfully submit that Applicant has the right to choose the terminologies to precisely define the invention. In addition, as stated in Manual of Patent Examining Procedure (MPEP) §2173.02,

“Accordingly, a claim term that is not used or defined in the specification is not indefinite if **the meaning of the claim term is discernible.**”<sup>2</sup>

In fact, the Information Disclosure Statement filed on 4 January 2007 clearly shows the “crest”, “root” and “flank” of a thread. Therefore, the claim terms “crest”, “root” and “flank” are well recognized by those skilled in the art.

Therefore, Applicant respectfully request the § 112 rejection of claims 19-24.

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<sup>2</sup> *Bancorp Services L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1372, 69 USPQ2d 1996, 1999-2000

### Claim Rejections - 35 U.S.C. § 102

- III. Claims 7-9, 13-15, 19-20 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Cuilleron (FR 2610512 A). Applicant respectfully traverses this rejection for the following reasons.**

Regarding claims 7-9, 13-15, 19-20 and 22 , on page 4, paragraph 5 of Paper No. 20071106, the Examiner stated that,

“Cuilleron discloses a cylindrical implant (i.e., Figure 5) with helical threads (i.e., 2b), said threads bearing a continuum of micro-patterns (i.e. 2c) that increase the exposed surface area of each thread (see Figure 7). Cuilleron also shows that implant threads can include inclined flanks have a continuum of micro-patterns thereon as shown clearly in Figure 4, said micro-patterns as shown having a polygonal cross-section.”

Respectfully, the pending claim 7 is amended to include the limitation of claim 10, and the amended claim 7 reads:

“A helical implant, comprising a core surrounded by helical threads, with the inclined flanks of said threads bearing a continuum of micro-patterns increasing exposed surface area of said helical thread, the micro-patterns comprising one or more recesses and protrusions, and the micro-patterns having **continuous and repeated arcuate** cross-sectional outlines throughout the entire length of the micro-patterns”.

The amended claim 7 is directing to the micro-patterns having continuous and repeated arcuate cross-sectional outlines. Cuilleron ‘512 fails to disclose the continuous and repeated arcuate cross-sectional outlines. Instead, Cuilleron ‘512 merely disclose a the micro-threads may be a polygonal cross-section (Fig. 3). Applicant’s arcuate cross-sectional outline is advantages over the polygonal cross-sectional outline because arcuate cross-sectional outline has a greater length than that of the polygonal cross-sectional outline, and consequently the micro-threads having arcuate

cross-sectional outlines may provide a greater surface area.

Accordingly, the amended claim 7 is patentably distinguishable over Cuilleron '512.

### **Claim Rejections - 35 U.S.C. §103**

**IV. Claims 10-11, 16-17, 21 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cuilleron in view of Hansson et al. (U.S. Patent No. 5,588,838). Applicant respectfully traverses this rejection for the following reasons.**

Regarding claims 10-11, 16-17, 21 and 23-24, on page 5, paragraph 6 of Paper No. 20071106, the Examiner admitted that,

“Cuilleron, however, does not explicitly disclose that said micro-patterns can be arcuate in shape.”

But the Examiner continuous to argue that:

“Hansson teaches an implant that utilizes micro-threads that have an arcuate design (column 2, lines 34-37). Therefore, it would have been obvious to one having ordinary skill in the art at the time of Applicant's invention to use arcuate shaped micro-patterns in the threads of Cuilleron in order to avoid, or at least minimize, stress-concentrations in the bone tissue around said microthreads as taught by Hansson.”

Applicant respectfully traverses.

#### **IV-1. Claim 13**

Respectfully, the pending claim 13 is amended to include the limitation of claim 10, and the amended claim 13 reads:

“A helical implant, comprising a core surrounded by helical threads, with the inclined flanks of said threads bearing a continuum of micro-patterns increasing exposed surface area of said helical thread, the micro-patterns comprising one or more recesses and protrusions, and each one of the

recesses and protrusions **having an identical arcuate cross-sectional outline** throughout the entire length of the micro-patterns".

The combination of Cuilleron '512 and Hansson '838's micro-threads does not have an identical arcuate cross-sectional outline throughout the entire length of the micro-patterns. Hansson's micro-threads are formed by a plurality of beads. Referring to Figures 1 and 2 of Applicant's Remarks filed on 10 October 2007, in Hansson '838, the cross-sectional outlines of the beads are identical when viewed on various cross-sectional planes. On the other hand, since Applicant's micro-patterns is continuous and repeated along the entire length of the micro-pattern, the cross-sectional outline of either one of the recesses and protrusions in the micro-pattern is identical throughout the entire length of the micro-pattern.

Therefore, the combination of Cuilleron '512 and Hansson '838 fails to teach or suggest that each one of the recesses and the protrusions of the micro-patterns has an identical arcuate cross-sectional outline throughout the entire length of the micro-patterns. Accordingly, the amended claim 13 is patentably distinguishable over the prior art.

#### **IV-2. Claim 19**

Respectfully, claim 19 is amended to read:

"..... said micro-pattern comprising at least one groove and at least one ridge having identical arcuate outlines and opened at one side when viewed on any cross sectional plane of the screw thread, and said cross sectional plane containing the longitudinal axis of the cylindrical core."

The amended claim 19 further defines the arcuate outlines being identical when viewed on any cross-sectional plane of the screw thread. Referring to FIG 2C in Applicant's amendment filed

on October 10 2007, Hansson's cross-section of the micro-beads are not same when viewed on different cross-sectional plane.

Accordingly, the amended claim 19 is patentably distinguishable over the prior art.

In view of the foregoing amendments and remarks, all claims are deemed to be allowable and this application is believed to be in condition to be passed to issue. Should any questions remain unsolved, the Examiner is respectfully requested to telephone Applicant's undersigned attorney.

A fee of \$60.00 (Small Entity) is incurred by filing a petition for one-month extension of time. Applicant's check drawn to the order of the Commissioner accompanies this Amendment. Should there be a deficiency in payment, or should other fees be incurred, the Commissioner is authorized to charge Deposit Account No. 02-4943 of Applicant's undersigned attorney in the amount of such fees.

Respectfully submitted,



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